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THOMAS G. NEWMAN, Editor.

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EDITORIAL

'Tis Always Morning Somewhere, and above
The awakening Continents, from shore to shore,
Somewhere the *bees* are "humming" ever more.

Be Always on the lookout to prevent and immediately stop robbing.

In the Spring, when colonies are building up, bees are less disposed to sting.

Enlarge Brood-Chambers and give empty combs as required, but keep well crowded and warmly covered.

At this Season, says a British bee-keeper, "meddle as little as possible, meddle as much as necessary, but always see to it above all things that the bees never for one hour are short of food right up to the time of the clover bloom."

Amazing Ignorance!—In the *Home and Farm* of Louisville, Ky., for this month we notice the following from a benighted region in the South. It is signed William P. Moore, Dogwood, Ark.:

Some of my neighbors say that there is no queen-bee, and no one can show her. They say that the drone lays the egg that the bee is raised from; that there is no bee except the drone and the little working bee. I believe that there is a queen-bee, and as I am young in the bee-rearing business, I want to ask the experienced bee-raisers, to please describe through the *Home and Farm* the difference in all the bees. First tell whether there is a queen, and how she looks and what she does; then tell about the drone, whether he stays in the hive all the time or at what time drones appear and disappear. What bee lays the egg, and at what time do they lay it? How long does a bee live? I would be glad to have some persons to answer these for the benefit of myself and neighbors.

Any so ignorant as is described in this item should lose no time, but procure a good Manual and inform themselves on the anatomy, physiology, and habits of bees. There is no excuse for ignorance in this age of light and knowledge.

The Injunction on the City Council of Arkadelphia, Ark., to prevent it from ordering the removal of the bees from within the city limits, as mentioned on page 307, was not sustained. Mr. Clark writes as follows concerning it:

The Judge ruling that he did not have any right to take up the case and enjoin; stating that he did not know what the Council intended to do, and that the Mayor might not fine me for keeping bees in the city limits; and if he did, then it would be time enough for me to ask for an injunction.

My attorney urged the plea that I wanted to obviate being fined and harrassed. If this case goes against us, it will work a hardship on all bee-keepers in incorporated cities and towns. Now is the time for us all to rally to the front and work to gain this case. If it goes against me it will work a hardship on me, as I have a wife and three small children that are looking to me to row the boat safely.

The Union will stand by Mr. Clark in this matter, and see it through, for it would be very detrimental to the pursuit to allow a decision against bee-keeping to be put upon record on the plea of its being a "nuisance."

The newspapers in Arkadelphia are teeming with items about this case. We subjoin a few which will be spicy reading for bee-keepers at large:

CITY FATHERS FOOLING WITH THE BEES.—Messrs. C. P. Smith and Z. A. Clark have for some time past been engaged in bee-culture in this city. And now, as to the business of producing honey, they have "millions in it." Others also keep bees within the corporate limits, so that were the census taken of those actually engaged withing our corporate limits as workers, the aggregate number of sober, industrious resident laborers would compare with the population of New York or London, if not with the most densely populous cities of China. But a recent ordinance of our city fathers have declared these denizens a nuisance, ordained in effect that the honey-bee, that so "improves each shining hour," must go. The ordinance, however, is to be hotly contested in the courts, and a suit will be at once begun that whether or no it prove to be "like linken sweetness," will doubtless be "long drawn out." "To be or not to be?" that's the question here just now.—*Gazette.*

PRAYER OF THE BEES.—To you, oh, city fathers, do we come in humble supplication and beseech of you that you will in your great omnipotence, deal with us more gently. Take us by our shielded sting; lead us; show us the gardens of your neighbors, that we may let your peaches and the cookeries of your own dear housewives go unmolested; and we may revel in your neighbor's choicest fruits, and your happy smiles. Oh, teach us the paths you would have us fly. Turn us from wrong and guide us forever while within your fair domain. Or, if you cannot do this, please, in your over-abundance of benevolence, give us one more fair trial in which with our peach-eating mouths we promise not to touch, taste nor handle, in your province, one over-ripe peach. Then, oh city fathers, if we do not keep every letter, syllable or word of our promise, with your ample town purse, banish us to the end of earth, or where we in peace can work to the benefit of our kind masters. QUEEN SHEBEE.

P. S.—Can we gather honey in Australia?—*Standard.*

We will bet our best hat that there is one spotted "razor-back" in the east end of town that will commit more depredations in one day than Clark's 200 colonies of bees will in one year. This bet stands till the *Clipper* is hatless, or that pig comes to a sad end.—*Clipper.*

THOSE BUG-A-BOO BEES.—To bee or not to bee; that is the question. Or rather, it was the question; for in their zealous and often ill advised search for hidden sweets, the honey-makers got into the bonnets of our Council-men, and the result of their buzzing was the passage of an ordinance which is rather rugged when viewed in a literary light, but which is perfectly bee-tight in the opinion of its authors, and would-be tight in the estimation of friends of that improve-each-shining-hour insect, who, it is asserted, have retained eminent legal talent to "bust" that ordinance into smithereens.

There is a gloomy satisfaction in the thought that the bees, against whom this crusade is being waged, are not our native Arkansas species, but bustling, ill-mannered emigrants from Italy. When introduced, these Italian lazzaroni, or buzz-aroni, immediately proceeded to revolutionize the honey-making business.—*Standard.*

Oh, yes, glorious city fathers, now have you done a deed of great valor; since your master-minds have disposed of a question of such great moment. Surely, do you now desire rest? Can you not all pray, "We have done our work; Transport us hence into everlasting bliss! After two long years of unprecedented toil, in which we have over-worked our master minds to such a degree that we are now unable to hold our daily post on the street corners, contemplating the work of two long years; for now who can say that the bees have not been driven from our fair city's limit—a work heretofore thought only capable of being done by the gods. Since they have willingly neglected so great a duty, let those whom we have ridded of the stinging, pestilential rotten-peach-eating bees, sing praises to our glorious name, while through our unpaved streets they unmolested go, inhaling life's invigorator from the beautiful ponds, and listen to nightly-praises sung by their thousands of musical inhabitants. Oh, let sweet perfume wasted from our store-house of myrrh, provided by our submissive merchants in the rear of their stores, greet us with life everlasting."—*Gazette.*

Combination Section-Case.—We have received from Mr. Hilas D. Davis, of Bradford, Vt., one of his combination section-cases, which he describes as follows:

It is filled with five different styles of boxes. The largest is designed for hotel use. The one-pounds and three-fourths of a pound sections are for the general trade, while the smaller sizes are designed for Fairs and samples of honey.

In regard to the section-case, I have tested it but one year, and from the results I have to expect at least one-third more honey with less soiling of cappings, and better filled sections.

The "case" contains five sizes of sections: two, three, four, five and six in a row, according to size—29 sections in all. They are all white poplar, as are also the cases, and make a nice appearance. Each row of sections is in a "case" by itself, with a wood separator attached, and the separator is hollow, leaving a passage-way for the bees inside, so as to prevent their running over the combs, as much as possible. The end-pieces are wedge-shaped, and a band slips up over all to hold the sections together. It is an ingenious contrivance, and is placed in our Museum with much pleasure.

Melissa Officinalis (or Melissa Balm, Bee-Balm, etc.) is probably the oldest recognized honey-plant in the world, being known to the Greeks, as its name indicates, and it is so called on account of the attractions to the bees which the plants are said to possess. Melissa is also credited with being hardy, fragrant and very productive in rich nectar; thriving alike in a dry or wet soil. It is an annual, and blooms profusely the first season.

Some Men are Ruled by passion, others by compassion. What a world of difference that little "com" makes in our happiness!

QUERIES

With Replies thereto.

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—ED.]

Imperfect Combs in Sections.

Query 424.—While taking off honey last fall, I noticed that quite a large percentage of the narrow sections had imperfect combs, caused by the bottom of the sheet of foundation warping out of the center of the section so far that one side would not be drawn out, thus causing a bad looking comb. How can this be prevented?—S. M., Mich.

By not giving the bees too many sections at a time.—W. Z. HUTCHINSON.

Use V-shaped pieces of foundation.—C. W. DAYTON.

That is *just* what I want to know.—G. M. DOOLITTLE.

I cannot tell, for I never have any such work in my supers.—JAMES HEDDON.

Avoid crowding the ends of the foundation, and place the sections plumb on the hive.—J. P. H. BROWN.

You should never fill your sections down to the bottom with foundation. The thin grades of foundation invariably stretch a little, and thus caused your trouble. Read "A Year Among the Bees" on this subject.—DADANT & SON.

By using a V-shaped starter with separators. Some use with the best of success starters put in this way—X, fastened at the top and bottom of the section.—H. D. CUTTING.

Strong colonies, a full honey-flow, and not too much surplus room are pretty good preventives. A starter of foundation at the bottom as well as at the top of the section will also help.—C. C. MILLER.

By using starters of foundation instead of full sheets. Then do not use narrow sections even with open sides. Bees store too much pollen in narrow sections, even if they were otherwise desirable. I gave up my favored system of continuous passage-ways on that account. After a large experience, both with and without separators, I can say nothing favorable of narrow sections.—G. L. TINKER.

It is possible the foundation was imperfect, by the cells being heavier on one side than the other. A dozen reasons might be given for the trouble; all of which might be wrong. One trouble with the queries sent to this department is, that too little data is given to enable an intelligent answer to be made. All the facts should be known, and even then the answers may be all "guess-work."—J. E. POND.

I never had such an experience as you mention. If the sheets of foundation are fastened in the sections, so as to swing clear of the sides and bottoms of the sections, nothing would produce the effect you describe but an unlevel hive, unless the colony was so weak in numbers that they could occupy only one side of the sheets at a time, and by the weight of the honey press the combs out of position. The latter is hardly probable. You may never see the like again.—G. W. DEMAREE.

Give less room for surplus at one time; and either give the bees triangular pieces of foundation, or leave ¼-inch space at the bottom.—THE EDITOR.

Mice in Hives in Winter.

Query 425.—My bees wintering on the summer stands are troubled by mice. What can be done to prevent this?—W. M. S., New York.

Try poison.—C. C. MILLER.

Use perforated zinc. Or else reduce the size of the opening by the use of wire-gauze.—A. J. COOK.

Make the entrances so small that the mice cannot enter.—W. Z. HUTCHINSON.

Never have the entrance over ⅜ of an inch wide, and mice will not trouble you.—H. D. CUTTING.

We make our hive entrances only ⅜ of an inch deep, and avoid all trouble from this cause.—DADANT & SON.

Use perfect hives with a ⅜-inch entrance protected by metal.—C. W. DAYTON.

Tack tin up in front of the entrance with slots cut in large enough to admit the bees, but not the mice.—J. P. H. BROWN.

Use tin or other metal to contract the entrances so that the bees can get out, but a mouse cannot get in.—G. M. DOOLITTLE.

Contract the entrances of the hives to such capacity that bees, but not mice, can pass. If they gnaw their way in, use metal (tin) contractors.—JAMES HEDDON.

I have had trouble with these little pests for two or three winters past. The only remedy I know of is to make the entrance so narrow that the mice cannot get into the hive. A strip of tin or of wood fitted over the entrance keeps them out for me.—G. W. DEMAREE.

There is a field-mouse a little larger than the common house-mouse that is very fond of bees. The house-mouse will also eat them, but is sometimes stung to death, as I have seen. I use very large entrances, but would use wire-cloth guards if troubled by the field-mouse, removing them whenever the bees could fly.—G. L. TINKER.

The remedy is simple enough, but the question reminds me of "Pat" when helping to build a "railroad" fence. A piece of board was found to be too "long inthirely," and poor Pat says: "What shall I do wid it? Shure an if it was too short I cud sploice it." The simple remedy is to make the entrance too small for the mice to get in; bees can go where mice can every time, but mice cannot go where bees can. I suppose the story of the cat and kittens of the Poet Watts is familiar, so I won't tell it, though *apropos*.—J. E. POND.

Make the entrances to the hives only ⅜ of an inch deep; if they gnaw the wood to get in, use tin contractors.—THE EDITOR.

Superseding Queens.

Query 426.—1. How old ought I to allow queens to become before superseding? 2. What is the most approved method of superseding? 3. What time should it be done? I know how queens are reared, but I do not know how to keep them so as to be ready for an emergency.—H. R., New York.

1. About two years. Some queens are good for a longer time. 2. Introducing young laying queens. 3. The best time is in the spring.—J. P. H. BROWN.

1. Let the bees attend to that. 2. The bees do it best. 3. Queens are most often superseded in July and August.—G. M. DOOLITTLE.

1. Leave that to the bees, so long as the queens do well. 2. Remove the old queen and cage the new one for a time. 3. It is easy to keep queens in nuclei.—A. J. COOK.

I am not sure whether it is best to leave the whole matter to the bees themselves, or to replace, each two years, the old queen at or a little before the close of the honey harvest.—C. C. MILLER.

1. As old as the bees will tolerate before *they* supersede them. 2. Let the bees do it in most instances. 3. At that time of the year when rearing or introducing, or both, succeed well in your locality.—JAMES HEDDON.

1. The bees will usually attend to the "superseding" without our interference. 2. Remove the old queen, and 4 days after insert a ripe queen-cell. Thirty-five days before the close of the honey harvest.—C. W. DAYTON.

1. Three years. 2. It is best to let the bees do the superseding, unless one is an expert at queen-rearing. 3. During a flow of honey. Queens may be kept in nuclei until needed, and in nursery cages in full colonies for a few weeks.—G. L. TINKER.

1. There is really no rule that could fix this matter. Some queens are better at 3 years old than others are at one year old, and this fact makes any fixed rule out of the question. 2. I prefer to leave the bees to do their own superseding. 3. I keep spare queens in small nuclei, and make the nuclei pay expenses by building some nice worker combs.—G. W. DEMAREE.

I am doubtful about the advisability of superseding. Were I to practice it, I should supersede by killing the old queen after the honey harvest of the second year of her life, and introducing a young fertile queen. Possibly it might be advisable to in-

troduce a queen-cell just ready to hatch, instead of a laying queen; it would save the risk of introducing. 3. Keep queens in nuclei.—W. Z. HUTCHINSON.

1. Three years is a safe rule, if you know you have the same queen. 2. My method is to find the old queen, put plenty of honey on the head, legs and wings of the queen I wish to introduce, and drop her in between the frames. Use honey from the same hive, and you will have success nearly every time. This is a quick way, and with me as sure as any. 3. Keep queens in nuclei.—H. D. CUTTING.

1. Never supersede them while they are able to, and do give good service in egg-laying. 2. Remove the old queen and introduce a new one by some of the many plans taught in the text-books and bee-papers. 3. Whenever the queen shows evidence of failing powers. Queens may be kept for some time in cages, in a colony or nucleus.—J. E. POND.

An unskilled apiarist should leave it to the bees to supersede queens. They will do it at the right time, and in a satisfactory way. Surplus queens may be kept in nuclei.—THE EDITOR.

Correspondence.

This mark ⊙ indicates that the apiarist is located near the center of the State named; ♂ north of the center; ♀ south; ○→ east; ←○ west; and this ♂ northeast; ○← northwest; ↘○ southeast; and ♀ southwest of the center of the State mentioned.

For the American Bee Journal.

Location of an Apiary.

O. CLUTE.

While bees can be kept successfully in almost every locality, if there is pasturage, yet the site of the apiary has a good deal to do with the ease and rapidity of work in caring for the bees, and probably it has also some influence on the bees themselves.

As to the bees, it is important that the apiary be so situated as to be well protected from high winds. If it can be protected on all sides it is well. Certainly it should be protected on the north and west. In the spring or fall a fierce north wind or west wind blowing directly on the hives and through the apiary, is by no means helpful to the bees; neither is an east wind or a south wind. Undoubtedly a site where the apiary is protected on all sides from severe winds is most desirable.

The kind of protection is not of much importance. A high fence will do. A wind-break of trees is excellent, if thick enough. A hill sloping to the south or east will keep off the north and west winds. Perhaps a side sloping gently to the southeast, with a thick wind-break of evergreens planted on all sides of it, would be the ideal site. It would catch the warm sunshine of spring, and keep the hives warm for brood-rearing. It would catch the early morning sun, and so rouse the bees to an early start when the white clover or the linden is full of its pure nectar. It would give the best protection against the wild winds from the west or north, that in this latitude sometimes sweep down upon us with so fierce a touch. With a little taste on the part of the bee-keeper in planting a shade-tree here, a flowering shrub there, a bed of bright flowers yonder, a cozy seat beneath this tree, a Japanese ivy to fasten its clinging touch on the oak on the further side—we should soon see a "place of beauty which is a joy forever."

Nearness to the house is on several accounts important. The family of the bee-keeper soon comes to regard nearness to the house as no evil. Even the little children will walk fearlessly among the hives, and very seldom get stung. But in order to keep one's friends from being so nervous that they refrain from visiting you, it may be well to have a high fence so disposed as to shut off the sight of the hives from persons on the street or approaching the house.

Of course it is best not to keep bees so near the road that there is danger of horses or people being stung. But a few rods are sufficient to prevent all danger, especially if there is a high fence or a belt of trees intervening. A little caution on the part of the bee-keeper to prevent his bees from stinging people will usually keep all persons his friends, and prevent any thought of his bees being a nuisance that must be "taken out of town."

My own apiary is on the summit of a hill, very gently sloping to the east. Trees, buildings, and high fences protect from north and west winds. There is no protection from east and south winds. It is about eight rods from a street on which there is a great deal of passing, and about three rods from the kitchen door. It is not an ideal location, but it is pretty good.

Iowa City, ○→ Iowa.

For the American Bee Journal

Comb Foundation in the Sections.

W. Z. HUTCHINSON.

The above is one of the subjects discussed in "The Production of Comb Honey." Since the book was published I have received the following letter. As it touches upon one or two points that I did not cover, but that have an important bearing upon this subject, it is with pleasure that I give it to the public, especially as the writer has given his consent to have it appear in the AMERICAN BEE JOURNAL:

STOW, N. Y., April 17, 1887.

Dear Sir:—I am engaged in the production of comb honey, specially for the Chautauqua local market. Chautauqua, as you know, has become a noted resort.

I have found the use of foundation in sections detrimental to sales, and have nearly discontinued its use, using only a small starter in a few last season, after my supply of natural comb for starters was exhausted.

Let me relate a case illustrating the effect of my course upon customers: The steward at the Kent House, Lakewood, told me last August that they had a distinguished guest who ate so much of my honey that he insisted upon buying it as an extra, so that he could have it every meal. "He eats no honey at home," said the steward "because he thinks it is nearly all either adulterated or wholly artificial, but he says he knows *yours* is pure."

That yellow septum clinches the "Wiley lie" with the average consumer, and it is impossible to undo the mischief.

A lady from Buffalo wanted a package to take home with her, as "she could get no pure honey in the city." "Why," said I, "do you think comb honey is adulterated?" "Oh, yes," said she, "they make it now by machinery so perfect that it is hard to tell the difference until you *come to eat it*."

In my opinion, if bee-keepers want to raise the price of honey, the most effectual plan will be to combine for the disuse of foundation in comb honey in sections, thereby largely increasing its consumption.

But I sat down to order your little book, and noticing that you make the non-use of foundation in the brood-nest a prominent feature in your system, I thought I would say that I have found its *non-use in the sections* essential to the increasing sale and consumption of honey.

Of course I should be pleased to have your views on the use of foundation in sections; and will close by asking questions which I think have not been answered in the Query Department of the AMERICAN BEE JOURNAL, viz: 1. What per cent. is gained by the use of foundation in producing comb honey? 2. What per cent. in sales is lost by its use?

Its existence in comb honey hinges upon the answer to these two questions.

LE ROY WHITFORD.

There is no question but what that Wiley lie has damaged bee-keepers to the extent of many thousands of dollars. Had it appeared only in the paper in which it was originally published, but little damage would have been done, but it was something sensational, and it went from ocean to ocean, and from gulf to bay, until there is scarcely a person who has not heard of it, and perhaps a majority of those who read it, believe it. This is not to be wondered at. This is an age of ingenuity and—adulterations, and everybody knows it; and when a man who knows nothing practically about bee-keeping, but has read the Wiley lie, discovers a firm, hard, tough, yellow substance in the centre of his comb honey, is it to be wondered at that he scrapes the *honey* off and lays aside the *foundation* with an, "Aha! you needn't talk to me, I *know* now that there is such a thing as artificial comb honey?"

Bee-keepers, there is no use of our "kicking;" the use of foundation does "give color to an unjust accusation," it furnishes the Wiley lie with a "foundation."

I know that Mr. Heddon says he used foundation three or four years before any of his customers noticed anything peculiar about the honey. True, but their suspicions were not aroused—they did not look for *artificial* about comb honey any more than we would now about a strawberry. The case is now far different; not only are suspicions aroused, but a great many people *believe* that comb honey can be ground out by machinery as easily as can mandrake pills, and all that is needed to change belief to certainty is the finding of a piece of corrugated, yellow leather (?) in the centre of a delicate morsel of honey. I am aware that comb foun-

dation has been made very thin—so thin that, according to the experiments of Mr. Doolittle, it offered less resistance than the base of natural comb—but foundation so thin as this, is, I believe, seldom made, although I will admit that some foundation very nearly approaches it, perhaps near enough for practical purposes, but there is the *color*. Natural comb is white, while comb foundation is yellow. Right here it would be very unfair not to admit that there is a great difference in the color of foundation, some manufacturers seem to have the faculty of so purifying the wax that it is a very light straw color, and it shows but very little even in the whitest honey.

Of course the thinner and lighter colored the foundation the less objectionable its use, but I doubt if foundation could be made so that an experienced bee-keeper could not detect its presence in honey. I hope I am mistaken, but there is a toughness about foundation that stands out in such bold relief when compared with the brittleness of natural comb, that I fear I am in the right.

Perhaps some bee-keeper will say: "Mr. H. if you believe as you say you do, why do *you* use foundation?" Because I am compelled to, or be left behind in the race. No, let me modify this. It is because I think I would be left behind. Perhaps I can best explain by quoting part of a paragraph from "The Production of Comb Honey:

"When bees are gathering honey slowly, the *natural* wax secretion probably furnishes sufficient material, and there is probably abundant time for the building of comb in which to store the honey. As the flow of honey increases, the wax secretion is increased by an increased consumption of honey. Whether it is profitable to allow this increased consumption of honey, depends upon the price of wax compared with that of honey, and the amount that is required of the latter for the production of the former. But, as the flow of honey increases, a point is finally reached where the bees cannot secrete wax and build comb with sufficient rapidity to enable them to store all the honey they *might* gather. When this point is reached, and possibly a long time before, it is profitable to use full sheets of foundation in the sections. But the flow of honey can be, and sometimes is, so increased that the bees cannot keep pace with the bountiful harvest, even with foundation in the sections, and these *drawn combs* would be an advantage. (It is *possible* that it would be more profitable to keep so many bees in one apiary that this latter point would never be reached.)"

Following the above come directions for securing natural combs for filling sections.

In reply to Mr. Whitford's first question, I would say that it depends upon whether the flow is light and lengthy, or heavy and short. When the harvest comes, as it often does here in the North, in the shape of a short, sharp "honey-shower," it is impossible to secure it unless foundation or drawn combs are used in the sections, and I am decidedly of the opinion that the securing of natural combs for use in the sections during a honey-shower is a most profitable one for investigation and experiment. At present I shall use in the sections, for my main crop, the thinnest and lightest-colored foundation I can find, but, in the meantime, I shall make some experiments in the line suggested by Mr. Whitford's first question.

To give a definite answer to his second query would, of course, be impossible. When foundation was introduced, many were the arguments brought against its use in the sections, but bee-keepers found that they could secure more honey by so using it, and the arguments had to stand one side, and it will be ever thus, unless we find some way of securing natural comb with no more expense and trouble than attends the use of foundation. Let us try.

The making of first-class foundation is an art and a science, and must be learned the same as any trade or profession. Many bee-keepers, as soon as they have 30 or 40 colonies of bees, and often before, think they must have a foundation machine, in the same sense that they need a honey-extractor, and the result is a vast amount of bunglingly made foundation. Bee-keeping, and the manufacture of comb foundation are two entirely distinct trades. Not one bee-keeper in one hundred—yes, I think it would be safe to say not one in one thousand—knows how to purify wax and make first-class foundation.

Rogersville, Mich.

For the American Bee Journal.

My Experience with Laying Workers.

RANDOLPH GRADEN.

As I have had a very obstinate case of these little pests, I thought I would describe the course I pursued, and in which I was finally successful.

In the latter part of July, 1886, I had a small third swarm issue, and, wanting increase, I hived them in a hive of the Doolittle style. In a few days I examined the hive to see if the queen was laying, when I found neither queen nor eggs. I closed the hive, as it was about noon, thinking the queen might be out, and not as yet fertilized. But about three days later I again looked for the queen, which I could not find; but upon looking over the combs carefully I found eggs in an irregular manner, and from one to nearly a dozen eggs in a cell; also some queen-cells started, which I cut out, and in one of the places I put a queen-cell that was about ready to hatch; but the bees destroyed it the first night.

I then introduced a queen, first taking all the frames and shaking the bees on the grass about 30 feet from the hive; in 24 hours I opened the hive and found the bees trying to "ball" the queen in the cage. So I cut out all the queen-cells and closed the hive, first adjusting the cage in such a manner so as to release the queen with very little disturbance to the bees. I left it 24 hours longer, when I found that the bees had made a hole under one side of the cage and killed the queen. As I was determined to know if a queen could be introduced, I procured another untested queen, and as there was now only about one pound of bees left, I also procured a half pound of bees.

I now opened the hive and took out two of the outside frames, after shaking off all the bees; these two combs being partly filled with honey, and none of the abnormal brood. I then closed the hive, and taking the two combs into my shop, I secured the queen into the cage on one of the combs, and then took a new hive, and placed the frame of combs containing the queen in the centre of the hive, and put frames of foundation on each side. I now took the hive having the laying workers from the stand, first closing the entrance, and put the hive containing the queen upon the stand where the other hive stood, and shook the half pound of bees into it; and as soon as the bees became quiet, I closed the hive-entrance and all.

I then carried the hive containing the laying workers about 10 rods away from where it stood, opened it, and shook all the bees on the grass, and let them "shift" for themselves. In about half an hour I found the bees spread all over the front of the hive containing the queen. I then opened the entrance, and as soon as most of the bees were in, I blew in smoke at the entrance until the bees began to roar, when I left them, and in 24 hours I carefully released the queen. In about six days I found the queen laying and filling the combs with eggs.

On account of the lateness of the season I had to feed about 10 pounds of sugar syrup. I then wintered them in the cellar, and on May 20 I took out the division-boards. They are filling the hive rapidly, and are quite strong.

My bees are all quite strong except one colony. One of my colonies cast a large swarm on May 11, being 12 days earlier than in former years.

Taylor Centre, Mich.

Iowa Homestead.

Relation of Bee-Keeping to Horticulture

EUGENE SECOR.

The true horticulturist, like the successful bee-keeper, is an enthusiast. I need not remind any one who plants trees and grows fruits, of the genuine pleasure that thrills the soul when nature responds to his intelligence, thought, and careful direction. He then lives in a world of his own. He needs no other intoxicant to complete his happiness.

The latent forces around us are ever ready to be set in motion, and only await the waving of the magic wand in man's skillful hand. Whoever touches the secret spring of this unseen power, and helps to develop wealth and beauty in place of poverty and ugliness, is adding to the general

good, contributing to the happiness of mankind, and to those courses that will "ring in" the millenium.

Horticulture is one of the fine arts. It requires the skill of a master. It is just as impossible for the thoughtless, brainless clod-hopper to reach the highest round in the ladder in propagating fine fruit, as it is for him to appreciate it after it is grown. But after all man's skill in planting; after ransacking the earth for improved varieties; after propagating, grafting and hybridizing, he must rely mainly on nature's methods of fructification. The favoring winds and industrious bees are needed to fertilize the bloom, to insure a harvest of fruit. As a means of accomplishing this end, there is no question that the bee is of great service to the grower of fruits. No other insect is multiplied in such vast numbers so early in the spring, when their agency is so much needed to fertilize the orchards and small fruits.

If the winds were the only means of carrying the pollen from flower to flower, how often would perfect fertilization fail, from too much or too little wind during the brief opportune period when the bursting buds are sighing for the life-giving dust from the neighboring flowers. Nature does not stake all her chances on a single peradventure. If the wind fails to do its work, and the bees are not present to assist, there is still another chance, and that is, most plants are provided with both the male and female organs in the same flower, but such is her abhorrence to in-and-in breeding, that every pistil will receive the fertilizing pollen from a neighboring plant much more gratefully than that from the same flower. To the delightful task of fructifying the fruit blossoms and rendering cross-fertilization more certain, nature has assigned the insect creation, and in a large degree it falls to the lot of bees to accomplish it.

Not only is honey provided in the delicate chalices to entice them, but the pollen, so essential to the plant (and just as essential to the bee in furnishing the proper food for its young) is placed in close proximity to the nectar, so that in getting either the bee is unwittingly carrying the dust from flower to flower, working out the wise plans of Providence as relates to the plants, and catering to man's pleasurable tastes at the same time. The drop of honey is placed in the flower, not because it is needed there to perfect the flower or the fruit, but to tempt the bee to brush its hairy legs against the anthers, and distribute the golden dust.

In the Divine economy honey-bees were apparently created for the sole purpose of fertilizing the blossoms of those plants, flowers and trees that, without their aid, would be barren. The honey which the bees gathered was for their own use, making it possible for them to live through the winter and continue the species. Originally they were found only in hollow trees, in caves, in clefts of rocks, etc. Man learned that honey was good, and having observed that the bees would store up more than they needed for their own use, after a time domesticated them. From this fact has come the honey of commerce, and the further important fact that bees are now kept hundreds of miles from their native *habitat* of timber and rocks, and are thereby made to do service to the horticulturist, the gardener and the farmer, over wide areas devoid of timber as well as in some of the older States that are fast being denuded of their primeval forests. Hence to the bee-keeper credit is due for increasing the usefulness of the bee far beyond nature's limited provisions.

So the bee introduces itself at once to the horticulturist as his friend. The latter ought to meet it half way, and acknowledge its two-fold service. It does him a service while on its daily rounds in search of food for itself and young, and again by storing up for his benefit the liquid sweets which it does not need itself, and which, ungathered, vanish as the morning dew. Like the manna which the Israelites ate of, the ungathered portion melted "when the sun waxed hot."

What, then, is there to hinder these two vocations going hand in hand, since each is helpful to the other? They ought, at least, to be on friendly terms. Each furnishes inducements for the other to exist.

Another reason why horticulture and bee-keeping may profitably go together: The horticulturist is a student not only of nature, but of methods; such must the bee-keeper be to succeed. The very habits of thought, study and observation which are necessary to success in the one, will prove of great advantage, nay, more, are indispensable in the other. It may be said in opposition to this theory of uniting these two branches of rural economy, that the world is drifting more and more into specialities—that life is too short, and competition too severe for a man to master more than one thing.

While this is true to some extent, and while I believe that every man ought to master some one thing so that he is authority on that subject, this need not preclude him from investigating other subjects, and at times pursuing other lines of thought. Indeed, I believe it to be the duty of every person to get out of the ruts of one-ideaism, and to invite that wider culture which a familiarity with a variety of topics brings. Our capacities for enjoyment are not confined to one sense. Our pleasures are heightened by an extended range of thought and observation. The successful farmer may be a lover of blooded cattle or horses, or both, without detracting from his ability to raise good crops.

But aside from these considerations of healthful diversions and pleasing variety for the mind, and returning again to the utilitarian side of the question, the horticulturist will find it profitable to pursue the study and practice of this delightful branch of entomology. The habits and instincts of this "pattern of industry" are ever interesting, and the business quite as remunerative as raising tender fruits in an "iron-clad climate."

This pursuit once entered upon, possesses charms of its own. No other stimulus is needed to follow it than the fascination of its own creation.

A great deal has been said about bees injuring fruit. Some fruit-growers have charged that they puncture the ripe grapes, suck the juice and damage the crop. But from the physical structure of the bee, this is said to be impossible by scientific entomologists. It has no jaws like the hornet. It is made to suck, not to bite; and on close observation, and after repeated experiments, it has been found that where bees are discovered helping themselves to ripe fruit, that the skins had been ruptured by the weather, or from over-ripeness, or that hornets, or wasps, or birds had first been the depredators. After the skin has been broken from any cause, if there is a scarcity of honey, the bees, always anxious to be doing something, will endeavor to get a share of the plunder. Therefore, as to bees injuring fruit, I, as their attorney, shall claim to the jury that the charge is not proven.

In dismissing this interesting subject, which, to the lover of fruits, flowers and bees, is always a source of infinite delight, I cannot refrain from quoting a few lines from "The Planting of the Apple-Tree," by that venerable sylvan poet, our own Bryant, who saw so much of future hope and promise as he sifted the soft mold about its tiny rootlets:

> What plant we in this apple-tree?
> Sweets for a hundred flowery springs,
> To load the May-wind's restless wings,
> When from the orchard row he pours
> Its fragrance through our open doors—
> A world of blossoms for the bee.

Forest City, Iowa.

For the American Bee Journal.

The Solar Wax-Extractor.

G. W. DEMAREE.

My plan of making it is as follows: Make a plain box 19½ inches wide, 14 inches deep, and 35½ inches long, inside measurement. Nail on a bottom and have it bee-tight. Now nail on some legs at the ends, and the box is ready for the wax-pan, etc. To make the wax or draining pan, cut a piece of sheet-iron (I prefer sheet-iron to anything else) 24 inches wide and 28 inches long. To get the concave shape of the pan, get out a board from half-inch stuff, 5 inches wide, and 19½ inches long, and cut one of its edges to a true circle. Now bend the sheet of metal around the circular board and nail it closely. This gives a concave pan 19½ inches wide by 28 inches long, with one end closed and the other end opened.

To adjust the pan in the box or frame-work, get out a board 7 or 8 inches wide, 19½ inches long, and hollow out one of its edges to correspond with the circular shape of the pan, and nail it crosswise in the box, so that when the open end of the pan rests on it, the pan will project about 2 inches over the board, and be about 6 inches above the bottom of the box.

This will give room for the wax moulds under the dip end of the wax-pan. Two beveled strips of wood 28 inches long, nailed one on either side of the box, supports the sides of the metal pan.

When all is ready the wax-pan is shoved down into the box or frame-work until its open end rests in the hollow board, and the sides of the pan on the beveled strips. It is secured in position by nailing through the wooden head of the pan and into the end piece of the box, and the sides of the pan are nailed closely to the beveled strips at the sides of the box or frame-work.

The sash is made like a shallow box 2 inches deep, rabbeted at the top to receive three panes of glass 12x20 inches, and slides back and forward between strips of wood at the sides of the frame-work. Some pressed pans 3 or 4 inches deep, and 7 inches wide at the top make good wax-moulds. When one is filled it is shoved aside and another put in its place. The filled pans are left in the box to cool gradually during the night. My wax-extractor is left in the apiary the year around. It has a board cover for it when not in use.

Christiansburg, ♂ Ky.

[By particular request of Mr. R. Dart, of Ripon, Wis., we reproduce the above article for the benefit of our new readers who may want to render wax in the manner suggested.—ED.]

For the American Bee Journal.

Progressive Bee-Keepers' Convention.

The Progressive Bee-Keepers' Association held its semi-annual meeting in Bedford, O., on Thursday, May 5, 1887, with President D. M. Allen in the chair. After the usual order of business was disposed of, a committee to report on text-books in apiculture was appointed, consisting of J. B. Hains, J. R. Reed and J. L. Way, who, in their report, named many of the standard books on the subject as recognized authority among experts, and could not fail to be of advantage to all who faithfully peruse them.

F. C. White, E. Hanchett, and B. T. Bleasdale were appointed a committee to report on the bee-keepers' supplies exhibited. They reported the following on exhibition: W. T. Falconer, the Chautauqua hive; J. B. Hains, a device for winter passages, and to allow feeding while bees are still packed; M. E. Mason, shipping case for keeping sections neat and clean; Berlin Fruit-Box Co., section-cases possessing some peculiar points of excellence; A. J. Spafford, woven straw-mat for absorbing the moisture, thereby keeping the hive in good condition; nice samples of foundation by W. T. Falconer, J. B. Hains and M. E. Mason.

Reports of the apiaries received were as follows: Number of colonies on Dec. 1, 1886, 1,324; on May 1, 1887, 1,205; being a loss of about 9 per cent., which is the least average loss ever reported in this association. Quite a number reported no loss at all.

Discussions of the following subjects then ensued:

IMPROVING THE HONEY MARKET.

J. B. Hains—Sell none but the best; have a moderate price, and stick to it.

W. Z. Hutchinson—Sell more honey near home; advertise it; push it.

B. T. Bleasdale—Have only gilt-edged, good honey, and nice packages. Bad looking sections will cause nice honey to bring a low price.

F. C. White—Educate grocerymen to handle honey so that they will not mar it. A great many now object to handling it, claiming that it is "dauby stuff."

James Heddon—Do all you can to increase demand, and be careful not to induce recruits into the business faster than the market will warrant. Produce more comb honey and less extracted.

J. R. Reed—Get people to consider honey as a staple article of food, and not a luxury. We ought to agree on a price, and all rise or fall from that price at the same time.

Wm. Deisman—Cultivate home trade. Talk it up as good for food and medicine, and the cheapest kind of sauce for the table, that can be bought.

M. E. Mason—By improving the quality and appearance.

REVERSIBLE HIVES, FRAMES & CASES.

W. S. Wait—They are more easily handled, and the bees fill the sections better. Bees winter well with them; most of my colonies came out strong.

Mr. White—I think that they need closer attention than most hives.

Mr. Hutchinson—They have been a success with me.

Mr. Heddon—After the first inversion of the brood-combs, which secures the complete filling of the frames, I do not care to invert them again. As the combs in a section-case are rarely all at the right stage of development at one time, it is better to invert them in wide frames, as the four sections in any one wide frame are almost universally developed alike.

PROMOTING INCREASE OF COLONIES.

Mr. Hains—Begin in June, or, when strong enough, divide them; put them on combs of foundation, provide them with a queen, and stimulate them by feeding.

Mr. Hutchinson—By dividing; furnishing queens, empty combs, etc.

Mr. Heddon—By giving each colony double the ordinary breeding capacity; having brood-cases very shallow; interchange them so as to stimulate the queen to the greatest activity in brood-rearing.

PREVENTING INCREASE OF COLONIES.

Mr. Heddon—Give the bees plenty of room to store surplus honey; shade the hives, and by using the dark races of bees.

Mr. Hutchinson—Give plenty of surplus room, shade and ventilation.

Mr. Hains—The same as the last answer, and see that they have not made preparation for swarming before putting on the sections.

M. E. Mason—For the past five years I have managed my bees by a system, which has become quite generally known as the "Mason Non-Increase System;" and, so far as I know, it is entirely original with me, and I believe it is the only practical system of controlling increase. I will assume that you possess the necessary knowledge of spring management up to swarming time, and will begin my system from that time, as follows:

We will suppose that our colonies swarm by number, beginning with No. 1 as first, No. 2 as second, etc., through the apiary. But previous to swarming, it is supposed that each colony has been provided with one tier of sections (I use the tiering-up hive, 24 sections in each tier), at least, and that they are well toward completion when swarming takes place. However, should swarming not occur at this time, and the sections become so filled that the bees require more room, lift the case and place an empty one under it. Never wait for them to swarm, and never give more surplus room than they can occupy.

We will now suppose that from No. 1 issues the first swarm of the season; we proceed to hive it in the usual way on a new stand which has been provided with a hive having 6 to 8 frames of foundation, according to the size of the swarm. A queen-excluding honey-board should be placed over the frames, and one tier of sections put on at once, which should be increased as the season and circumstances suggest.

On the following day, from No. 2 issues a swarm, which is secured in a hiving-box. We now go to No. 1, which swarmed the day before, and remove the sections, and take from the centre of the brood-nest, two frames of hatching brood with adhering bees, and one queen-cell, of which form a nucleus. Now go over the remaining frames, and carefully remove all the queen-cells that may be in course of construction. Be sure that none remain, for the leaving of one will be ruinous to this system, and the only failures so far reported have come from a lack of thoroughness in this particular. Shake the bees from the comb, and get every queen-cell. Now in place of the two frames removed, supply two frames of foundation. Comb will not do, as they are at once filled with honey, and the queen is deprived of her natural place of depositing eggs.

A case of sections provided with full sheets of foundation is now to be placed on the hive next to the brood-nest, and those removed placed on top of the empty ones. Now close the hive, carry No. 2 swarm, which is in a hiving-box, and shake it in front of No. 1, which has just been prepared for them. Then, as soon as they have entered, it will be perceived that a colony of bees there exists in the best possible condition for storing surplus in the sections. They have had the

advantage of the natural swarming impulse, and if they are carefully watched, and more sections given as they are required, and no faster, swarming for the season, so far as this colony is concerned, will be no more.

No. 3 we will suppose now casts a swarm. Go to No. 2 and arrange the same as No. 1 was previous to hiving No. 2 swarm into it, taking the two frames of brood, minus the queen-cells, and giving them to the nucleus previously formed from No. 1; by this process the nucleus is built up to a full colony as swarming progresses, when sections should be given them. After No. 2 has been prepared the same as No. 1, hive No. 3 into it.

The above will suffice to illustrate the system which should be followed through the apiary as swarming proceeds, until all have been so treated, and the result will be, if the system as here given is fully complied with, a minimum increase of honey for the market.

FOUNDATION IN BROOD-FRAMES.

Mr. Deisman—I do not want starters in brood-frames.

Mr. Bleasdale—I never have tried starters, but I am going to experiment.

J. D. Haggart—Foundation pays well used in full sheets.

Mr. Hutchinson—It depends upon circumstances, which I have considered in my little book, "The Production of Comb Honey."

Mr. Heddon—At the present price of foundation, I am of the opinion that it usually pays best to use full sheets; but there are no doubt times and conditions when it is most profitable to use only starters, if the apiarist knows how, and takes the time to make the surrounding conditions what they should be.

Mr. Hains—Fill the frames; it pays best.

MARKETING HONEY.

Mr. Hutchinson—Put up extracted honey in small packages, either tin or glass; comb honey in pound sections, in small crates. Sell to the consumer if possible.

E. Hanchett—Sell to your friends and neighbors, and put it in packages to suit them.

Mr. Heddon—Manipulate the best of sections in such a way as to have them come from the hive unsullied; clean them of all glue, and crate them in one-story shipping-crates not holding more than 12 pounds each. The selling depends upon the locality.

Mr. Mason—Its preparation must begin with its production. It must be stored in white, smooth one-pound sections, which must be kept neat and clean. The different kinds of honey must be kept separate. Separators must be used to insure uniformity of weights, and an even surface, giving the honey a better appearance, and a proportionate better price. Never allow a section to go to market that is not perfectly filled, and every cell capped over; and of all things, do not market two colors of honey in one section.

MISS DEMA BENNETT, *Sec.*

For the American Bee Journal.

Appropriate Apicultural Names.

J. F. LATHAM.

The items and remarks on page 291, relative to a term by which honey in its liquid and granulated conditions may be properly designated, seem to call for more than a passing notice. Strained honey has been, and very properly, banished from apicultural parlance. But will the word "liquid," when applied to honey in all of its conditions out of the comb, embody its true appellation? Anything which will flow may be termed "liquid." Would not the phrase "liquid water" be as applicable when used to denote that element? Congealed water is ice. Granulated honey is sugar. Why not call honey in its liquid and granulated conditions "free honey?" The word "free," when used adjunctive with honey, as an explicative, would not admit of a qualifying sense as to change, or *quality*. The term "free honey" would mean *honey*, and no twisting or prostitution of language could mar its definition. When not granulated, honey can be consistently called "liquid;" and when crystallized, it may as consistently be called "granulated."

Taking another step in advance, the term "comb honey" does not seem to truly describe honey in the comb, but rather bears the aspect of a misnomer—of a signification conveying a sense opposite to that usually intended when applied to represent honey as it is stored by the bees. There is no such a substance as *comb* honey. Honey, when confined in the comb, as stored and sealed by the bees, is no more or less than the pure sweet that its name designates—nectar gathered from nature's flora.

"Honey-dew" is another misnomer which deserves banishment from the bee-keepers' vocabulary. To the initiated the use of such terms as are alluded to in the foregoing, may be harmless, as the well-posted honey-producer knows, or is supposed to know, what he is talking about when discussing such subjects; but to the novice, their use by those who are "looked to," has a misleading tendency.

Still another step along the same line is another term that is applied to a worker-bee that lays eggs. It cannot be truthfully denied, but that a worker-bee which deposits her eggs in the cells of the comb is a *laying* worker-bee; but do the terms "laying worker" possess sufficient scope from which a true comprehension of her functions can be deduced? A worker-bee can lay eggs, but they are agamic in origin, and if I may be allowed to add, functions. The same may be said of an unfecundated queen-bee, or old and defective queens. Leaving queens out of the list, it seems that the term "agamic worker" would be more efficient when applied to a worker-bee stimulated to the habit, or impetus of egg-laying in compliance with the promptings of a sympathetic desire to propagate its kind, than that of "laying worker."

Pushing a little further, I can coin no reasons as to why the single term —agami and its plural—will not comprise everything having reference to the functions of the *laying* worker-bee.

Cumberland, ♀ Me.

For the American Bee Journal.

Damp Cellar for Bees, etc.

WM. MALONE.

Bees have wintered well in this part of Iowa, as far as heard from. I wintered 41 colonies in a very damp cellar or cave, at a temperature of from 40° to 48°, and the bees were the most quiet at 40°, with ventilators closed.

The bees came out in very excellent condition on March 9 and 10, without the loss of a colony, and as strong in all appearance as when put in, on Nov. 25, 1886. I could hardly see that they had consumed any honey. They commenced gathering honey and pollen from soft maple the next day after being put out, and continued three days, when a cold spell came, and they dwindled considerably, so that I lost 3 weak colonies; but at present my bees are in splendid condition. I have young queens laying, and have taken 125 pounds of fruit-blossom honey, and they have 300 or 400 pounds sealed over ready to take; but the bees have stopped working, and so I will have to stop taking honey from them for the present.

PROFITABLE PRODUCTION OF HONEY.

I am satisfied that honey will have to compete with other sweets before we can sell any great quantity in our home markets for "spot cash." If we cannot realize the cash for our honey, we had better devote our attention to something that will command it. In my locality I can make more money producing extracted honey (that my neighbors say is good) at even a less price than we now get for it, than I can at any other business that is open to me. Can I get the cash for all I can produce at a lower price at my apiary? I believe I can. But shall I not interfere with some other honey-producer in doing so? This is an important question, and I would like to have your opinion on it, Mr. Editor, as well as others.

Newburn, ♀ Iowa.

[This is a legitimate question which should be fully discussed at the forthcoming convention this fall, at Chicago. We prefer to leave it to the decision of the giant minds which will be there to give it a thorough investigation. Much can be said on both sides—for "there are two sides to every question," and this is no exception to the rule. We shall store up our "powder" till then.—ED.]

Pacific Rural Press.

Hints to Beginners—Spring Work.

WM. MUTH-RASMUSSEN.

If you are a beginner in bee-culture you should, during the winter, have read up on the subject, and made up your mind what hive you want to adopt, and where you are going to place your new hives, when you get bees in them; for now is the time to get the hives ready, whether you intend them for transferred colonies or for swarms.

Make or send for everything you will need during the season. When swarming time comes, it is too late to commence making hives. The swarm may leave, before you get a hive ready for it. Fill the brood-frames with comb foundation. This will secure beautiful, straight worker-combs, and prevent the bees from rearing and feeding a horde of drones.

If you intend to produce comb honey, put your sections together, fill them with thin foundation, and store them away in the packing-boxes, that they may keep clean, and that you may have them ready when needed. Overhaul wide frames or section-cases, scrape off all propolis or bits of wax, if you did not do it when you took them off last fall. See that your honey-tank is clean and does not leak; that your extractor and smoker are in working order; that your honey-knives are sharp. Make queen-cages of wire-cloth. Look after swarming-implements. Make or procure cans in time. If you wait until the last moment, you may find that supply dealers are so crowded with orders that you cannot get what you want until it is too late, and you may lose your crop. You will then only have yourself to blame.

Clean up in the apiary. Remove all weeds and burn them up. Trim the trees, if they need it. Plant shade-trees, if they are not already there, gather together all loose boards and sticks that may be scattered around.

Mark the exact place for new stands, as you would lay out the ground for a vineyard or orchard. Level off the ground, where each new hive is going to stand. Clean up all empty hives or such in which the bees have died, and close the entrance to prevent spiders, moths and ants from getting in. When you put the swarms into these hives, do not forget to open the entrance again. Give all the old hives a coat of paint if they need it. Number the hives, if they are not already numbered. Procure an "apiary register," or, if you have one, look it over and make yourself familiar with the condition of each colony, when you last examined them. Make a note of those colonies which have old queens, that will need replacing.

As soon as the weather is warm enough, examine each hive. See that it has a queen, and that it has honey enough. Clean out the trash that has accumulated on the bottom-board during the winter. If left, it will make a nest and hiding-place for moth-worms. If the cloth over the frames is worn out, replace it with a new one. If the bees are weak in numbers or queenless, give them sealed brood from the other hives, till you can give them a a new, young queen. If they are short of honey, give them full combs, which you should have kept over for that purpose, or give them combs of honey from the colonies that can spare it, replacing them with frames of foundation, or better, with empty worker-combs. If they have too much honey, which crowds the queen for breeding-room, take it away from them and extract it, or store it in the house, or give it to colonies that need it.

Lay your plans now for the whole season. Have a place for everything, and keep everything in its place. Order takes time, but also saves time, when time is precious. Even if you do what you can now, you will have your hands full when the swarming and honey season comes. If you delay, the day will never be long enough.

Independence, Calif.

For the American Bee Journal.

Extracting Honey—Senses of Bees.

AARON BENEDICT.

As the season for surplus honey is at hand, I would say to beginners, go slow with the extractor. Too many extract as fast as the bees gather the honey; after awhile the honey-flow ceases all at once, leaving the bees without honey enough to winter on. The next spring the inexperienced bee-keeper says that bee-culture is a failure, and quits the business. I will now state how to manage and be safe:

Put on sections for comb honey (the most of the comb honey will be stored before the bees swarm); when they swarm hive them in a new hive with foundation. Place them on the old stand, and put the old hive on top of the new colony, with a division-board between the bees. A frame nearly the size of the hive with wire-screens tacked on it, is what is wanted when the bees get fairly to work in the lower hive. In 3 or 4 days remove the division-board, and let the bees go together again. The queen will, as a rule, remain in the under hive, and the bees will store the honey in the upper hive. Let them remain until the honey season is over, and then examine the bees; if there is not enough honey in the lower hive for winter, take sealed honey from the upper one and give to them; the balance extract. This will be good, ripe honey, and if candied, it will remain so.

HEARING, SEEING AND SMELLING.

The sense of hearing in the honey-bee is very acute, as well as seeing and smelling. I have frequently heard young queens answer to the piping of a hatched queen before they come out of the cell. Of course they can hear.

BEES DO NOT FREEZE.

Bees do not freeze and thaw out like snakes and woodchucks. Snakes will freeze and thaw and live; but a frozen bee never lives again. They are like the raccoon—they go into winter quarters, live on their fat; the bees live on their honey.

HONEY PRODUCTION.

By request I prepared the following to be read at the Morrow County, Ohio, Farmers' Institute, and now send it for publication in the AMERICAN BEE JOURNAL, for the information of beginners:

How to produce the most comb honey per colony is done by using sections filled or partly filled with comb foundation. To get the bees to work readily in these sections the bees are pressed up in the sections by means of a division-board; as soon as the bees get fairly to work in the sections the board is removed and the bees given the range of the hive below. As fast as these sections are filled they are removed and empty ones put in their places. This process is followed throughout the honey-gathering season.

How to produce the most extracted honey is done by using two hives, one upon the other; the extra hive should be filled with combs or comb foundation; the bees will store the honey in the upper hive; the extracting is all done from this hive; some extract as fast of the bees gather the honey, others not until the honey season is over, adding a third hive if necessary. After the honey season is over, the bees are all placed in one hive again and sufficient solid honey given them to winter; the balance is extracted; the empty combs are carefully preserved in a cool, airy place for the next season's use; this latter method I prefer to the former.

DIVIDING FOR INCREASE.

Multiplication of colonies by division is done by first blowing a little smoke in at the entrance of the hive to quiet the bees. The cover or cap is removed, the honey-board and surplus arrangements are taken off; the cover placed back, a little more smoke is added if required, and the bees soon fill themselves with honey. Now by gently rapping or jarring the hive the bees will go up into the cover; they are then shaken out on a cloth to find the queen; as soon as she is found, the bees and queen are put in a new hive and placed on the stand where the old one stood; the old hive is placed on a new stand; a young fertile queen is now given to the old colony, and the work is done.

To illustrate: If this old colony had swarmed on the day they were divided (naturally), it would have been 18 to 20 days before an egg would be laid by the young queen in the old hive; by giving the old colony a fertile queen, there would be no creation of eggs; at the end of 18 or 20 days there would be just as many eggs and brood as there was when divided; dividing in this respect is ahead of natural swarming.

To improve our bees we breed our queens from the queen or mother-bee whose worker bees produce the most honey. We also breed from queens whose workers are docile and easily handled; by thus breeding we have improved our bees much. We have now imported to this country all races of bees: Italians, Cyprians, Cyrenes, Egyptians, Holy-Lands, etc. Those bees are in the hands of experienced bee-keepers, being tested as to their honey-gathering qualities. I know of no other industry that has improved as much in the past 25 years as has apiculture. The wool-grower of 25 years ago has gained from 2¼ to 6½ pounds per fleece; while the honey product has increased from 8 to 60 pounds per colony.

Bennington, ⊙ Ohio.

Local Convention Directory.

1887.	*Time and place of Meeting.*
Nov.	——North American, at Chicago, Ills. W. Z. Hutchinson, Sec., Rogersville, Mich.
Dec. 7-9.	—Michigan State, at East Saginaw, Mich. H. D. Cutting, Sec., Clinton, Mich.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

No Roaring—Liquid Honey.—Jos. A. Hawn, Farmington, ☌ Mo., on May 21, 1887, says:

I have never been able to detect any "roaring" in my bee-yard in cold weather, that could be heard *one* foot away. Part of my bees were in single-walled hives. I would suggest to Mr. Demaree that his term "liquid honey" would apply equally well to honey in the comb, that is not candied.

Very Dry Weather.—Jos. Mason, Wallace, ♂ Ills., May 21, 1887, says:

The weather is very dry in this vicinity, and unless we get rain soon the bees will suffer. The pastures are drying up fast. The mercury, the the last few days, was as high as 92° in the shade.

Good Honey Season Expected.—P. L. Gibson, Muscatine, ☌ Iowa, on May 16, 1887, writes:

I wintered my bees in a cave. I put in 40 colonies on Dec. 8, and took them out on March 8, all in good condition. Drones have been flying for several days, and swarms are expected soon. White clover began to bloom one week ago, and with the heavy rains of last week, it bids fair for a good honey season. One of my neighbors has bees in the second story of an old house; there are bees flying to and fro through the windows, and are doing nicely. Another neighbor has a half-gallon glass-jar filled with nice comb honey, put there by the bees last year. No bee-legislation or taxation for me, please, but let them go free with the pigs and poultry, and if they root up, scratch up, or sip up your neighbor's vegetables, pay all damages cheerfully.

Bees do Roar in Winter.—W. C. Steddom, Oregonia, ♀ O., on May 20, 1887, says:

Bees in this locality, when the mercury falls too near zero, can be heard distinctly several feet distant. Until the late controversy, I supposed every bee-keeper to be familiar with the fact. I was surprised when Mr. Demaree said his say about the bees being quiet when the mercury suddenly falls too near or below zero.

Terrible Drouth.—10—B. H. Standish, (200), Evansville, ♀ Wis., on May 23, 1887, writes:

We have not had a good rain this spring, and but one or two light ones. This following the severe drouth of last season, makes the outlook very poor for bee-keepers. White clover is not to be found, except on low land and in protected places, and even this is now stunted and withering. It will scarcely keep breeding up unless we soon have rain and favorable weather.

[The refreshing showers which have been so general all over the Northwest, we hope have found Evansville before now, and made amends for past neglect.—ED.]

Bees Roar in Winter Confinement.—J. W. Bayard, Athens, ♀ O., says:

Do bees "roar" in winter confinement? This is hardly a mooted question among intelligent bee-keepers at the North. Of course as one goes South the cause entirely disappears. In this latitude—a trifle north of Cincinnati—when the temperature reaches zero, it becomes a disturbing cause, and the roaring process begins, and the lower the temperature the louder the "roar." This is a provision in nature, I presume, that is eternal. I winter my bees without protection on the summer stands.

Loud Roaring of Bees.—G. A. Brunson, Plymouth, ☌ Mich., on May 19, 1887, writes:

In regard to roaring, I would say that one morning during the coldest spell of the winter of 1884-85, I heard loud roaring of the bees in my chaff and sawdust packed hives, which proved to be too light or thin-walled for the occasion. They had 3-inch walls, and it was 34° below zero. I afterwards found plenty of ice and frost inside the hives, and together with the large quantity of foul stores or honey-dew they had gathered the fall before, caused the death of 23 out of my 25 colonies. My theory of the roaring is this: As the interior of the hive was chilly, a greater consumption of food was necessary, and in order to get at the food a greater heat was necessary to allow the bees to leave the cluster to gather the fuel required to maintain life and heat; hence their roaring.

No Sound in Winter Detected.—A. B. Gregory, Lansing, ♀ Mich., says:

I have wintered from 10 to 30 colonies of bees out-doors for the past 8 years, and I have never been able to detect any sound from them when standing by the hive in cold weather. In fact, no sound was audible with the ear close to the hive when the temperature was below zero.

But Little Humming in Winter.—Randolph Graden, Taylor Centre, ☌ Mich., writes:

I would say in reply to Mr. Demaree's request, that I have walked among my hives on the summer stands in the winter almost daily, and I have always noticed if all was in good condition, that the bees made very little noise or hum when the temperature was at zero or below; but as it moderated, the hum increased to the natural hum that may be heard almost any time in the spring or autumn.

Roaring Bees in Winter.—Wm Irwin, Columbus Grove, ☌ O., on May 19, 1887, says:

I wintered my bees on the summer stands in single-walled hives, and I could hear them sounding from 9 to 13 feet away, with a temperature ranging from zero to 15° below.

Bees Roaring in Winter.—H. N. Patterson, Humboldt, ☌ Nebr., writes:

I winter my bees on the summer stands, protected. At a temperature of zero and below the bees can be heard roaring. I examine them once every week in the winter; when the temperature is above zero, I blow my breath in the entrance to see if there is life. When colder, I know from the hum at a distance, for the colder the louder it is.

Waiting for Honey to Gather.—M. O. Tuttle, Osage, ♂ Iowa, on May 23, 1887, writes:

I reported in March that I had 80 colonies of bees in the cellar. I took them out on April 11, after a confinement of 155 days, I think. I lost none from the effects of wintering. Two starved from the effects of robbing last fall. Seven more have gone one way and another since being taken out. This has been the worst spring for robbing that I have ever experienced. I now have 71 colonies, and 50 of them are very strong. They are in surplus cases now, waiting for honey to gather. I have several hives tiered up—one hive on top of the other—with both hives full of bees

from top to bottom. There were young bees when taken from the cellar. I have not yet seen a live drone in my yard. For a few days past I have seen the bees dragging a few drones from the hives; also drone brood. I suppose they do it on account of scant pasture. We had a little shower last Saturday, which I am in hopes will be followed by more. Our prospects for spring clover is slim. Many bees are in good condition in this county, many are dead, and some are weak, as usual. Wintering bees does not worry me any more.

Short Crop and Few Swarms.—A. J. Foss, De Luz, Calif., on May 19, 1887, says:

I believe thst it is pretty generally admitted that the honey crop of this county will be very short; although bees in this locality are very strong, they are gathering very little honey, and storing no surplus. We have had very few swarms, and the indications are that they will not swarm much.

Bees make No Noise.—J. P. Cedarholm, Galesburg, Mo., on May 23, 1887, says:

I winter my bees in single-walled hives, on the summer stands unprotected, save a cloth cover and the caps of the hive. When the temperature approaches zero, or goes below, no sound issues from the hives, if the bees are in good health.

Very Weak Colonies.—R. Dart, Ripon, Wis., on May 24, 1887, says:

Our bees wintered well here, but we have lost heavily by spring dwindling; and many of our remaining colonies at this date are very weak.

Bee-Keeping in Washington Territory.—John Boerstler, Vashon Island, Wash. Ter., on May 14, 1887, writes:

I am starting in with 3 colonies of bees, 2 being hybrids and 1 black colony. There are only 7 colonies on the whole island, and 2 of them have starved to death. My 3 colonies are doing well, and I can tell more about them by fall, as I am just beginning in a new country where there is not much pasturage for bees. Drones have been flying for 2 weeks. My bees are in box-hives, but I will transfer them to Langstroth hives soon.

Storing Honey Rapidly.—J. H. Higgins, Victoria, Tenn., on May 16, 1887, writes:

The past was a very hard winter on bees here. Some in logs are dying yet, but mine are storing honey very fast now. I lost 2 colonies that were late swarms, have 9 yet, and I am expecting swarms now. Some of my hives have 20 pounds, and some 30 pounds of honey in them. I think the bees will store a great deal of it this year. This country is behind in bee-culture, although it is a splendid place for bees. My bees brought in the first pollen on Jan. 18, from alder. I winter my bees out-doors. The ground never freezes here over 4 inches, nor remains so over 3 or 4 days. Bees can fly the most of the winter. This is a mountainous country filled with linden timber, and all manner of wild flowers. My bees worked until Nov. 14, last year.

Never Heard them Roar.—F. L. Smith, Chittenango, N. Y., says:

During my 12 years' experience with bees, handling from 100 to 150 colonies, spring count, I have never yet heard them roar in extreme cold weather. I have often visited them for the purpose of observation, and have learned that the colder the atmosphere the more death-like stillness prevails within the hive.

Early Swarming.—John A. McSpadin, Arenac, Mich., on May 25, 1887, says:

Last fall I bought one colony of bees and a chaff hive. On May 10 they swarmed, and again on May 22 and May 24, so I now have 4 colonies. My neighbors think they never saw bees swarm so early, although they have kept bees for years.

Roaring in Cold Weather—Edwin Baldwin, Mendon, Ills., on May 25, 1887, says:

I winter my bees protected on the summer stands; during the coldest weather they were "roaring," but I think it was caused by their becoming uneasy, on account of improper food or lack of ventilation.

Fine Rain and Prospects Good.—Reuben Havens, Onarga, Ills., on May 23, 1887, says:

White clover is beginning to bloom, and there is promise of an abundant crop. We had a fine rain last night, which will bring bloom forward rapidly. Bees are strong and in good condition. Fruit-bloom furnished sufficient honey to keep constant brood-rearing. Winter losses have been small.

System and Success.

☞ All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and commence to use it. the prices are reduced, as follows:

For 50 colonies (120 pages)	$1 00
" 100 colonies (220 pages)	1 25
" 200 colonies (420 pages)	1 50

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable.

One Dollar invested for the weekly visits of the AMERICAN BEE JOURNAL for a year, will richly repay every apiarist in America.

Honey and Beeswax Market.

The following are our very latest quotations for honey and beeswax:

CHICAGO.

HONEY.—Sellers ask from 7 to 10 cts. for anything off in comb honey; this includes dark undesirable and crooked combs, and 2-pound sections. Good 1-lb. sections, 10@12c.; choice, 12½@13c.—BEESWAX,—25c. R. A. BURNETT,
Mar. 28. 161 South Water St.

DETROIT.

HONEY.—Best white comb, 11@12c. Market is nearly bare, awaiting the new crop.
BEESWAX.—23@24c.
May. 11. M. H. HUNT, Bell Branch, Mich.

SAN FRANCISCO.

HONEY.—We quote: Extra [illegible], white, 4½@5 cts.; light amber, 4½c.; amber, 4½c. Comb, white, 12@14c.; amber, 7@9c. Demand good.
BEESWAX.—23c.
May 8. SCHACHT & LEMCKE, 122-124 Davis St.

CLEVELAND.

HONEY.—Choice white in 1-lb. sections, 12@13c.; second quality, 10@11c.; and buckwheat unsalable at 8@9c. Extracted, 5@6c.
BEESWAX.—25c.
Apr. 20. A. C. KENDEL, 115 Ontario St.

ST. LOUIS.

HONEY.—Choice comb, 10@12c. Strained, in barrels, 3½@4½c. Extra fancy, ¼ more than foregoing prices. Extracted, 4½@6c. Market dull.
BEESWAX.—Steady at 20½c. for prime.
May 20. D. G. TUTT & CO., Commercial St.

SAN FRANCISCO.

HONEY.—We quote: White comb, 12@14c.; amber, 7@10. Extracted, white, 4½@5c.; light amber, 3½@4½c. Market quiet.
BEESWAX.—19@21c.
May 14. O. B. SMITH & CO., 423 Front St.

MILWAUKEE.

HONEY.—We quote: Finest white 1-lb. sections, 12@12½c.; choice white 1-lbs., 11@12c.; choice 2-lbs., 10@11c.; dark not wanted, and imperfect slow. Extracted, finest white in kegs, 6½@7c.; good white in kegs and barrels, 6@6½c.; dark, 4 to 4½c. Demand good and market firm.
BEESWAX.—25c.
May 4. A. V. BISHOP, 142 W. Water St.

NEW YORK.

HONEY.—We quote: White comb, 9@12c.; dark 5@7c. California comb, 8@9c.; extracted, 5@6c. Sales large and demand good.
BEESWAX.—23@24½c.
McCAUL & HILDRETH BROS.,
May 10. 28 & 30 W. Broadway, near Duane St.

KANSAS CITY.

HONEY.—We quote: White clover 1-lbs., 10@12 cts.; dark, 9 to 10c. White clover 2-lbs., 10 to 11c.; dark, 9 to 10c. Extracted, 5 to 6c. in small way. Very little extracted in the market.
May 16. CLEMONS, CLOON & CO., cor 4th & Walnut

BOSTON.

HONEY.—1-lb. packages of white clover honey at 13@15c.; 2-pounds at 11@13c. Extracted, 5@7c. Sales slow.
BEESWAX.—26 cts. per lb.
Apr. 22. BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI.

HONEY.—We quote for extracted, 3@7c. per lb. Best comb brings 11@14c. per lb. Demand fair.
BEESWAX.—Good demand,—20@23c. per lb. for good to choice yellow.
May 21. C. F. MUTH & SON, Freeman & Central Av.

Colored Posters for putting up over honey exhibits at Fairs are quite attractive, as well as useful. We have prepared some for the BEE JOURNAL, and will send two or more free of cost to any one who will use them, and try to get up a club.

When Renewing your subscription please try to get your neighbor who keeps bees to join with you in taking the BEE JOURNAL. It is now *so cheap* that no one can afford to do without it. We will present a **Binder** for the BEE JOURNAL to any one sending us three subscriptions—with $3.00—direct to this office. It **will pay** any one to devote a few hours, to get subscribers.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

Issued every Wednesday by

THOMAS G. NEWMAN & SON,

PROPRIETORS,

923 & 925 WEST MADISON ST., CHICAGO, ILL.

At One Dollar a Year.

ALFRED H. NEWMAN,

BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

Dr. Miller's Book, "A Year Among the Bees" (75 cts.), and the BEE JOURNAL for one year ($1.00), both of which we will club for only **$1.50.**

The Convention History of America with a full report of the proceedings of the Detroit and Indianapolis conventions, and the AMERICAN BEE JOURNAL for one year, will be clubbed for $1.25.

As there is Another firm in Chicago by the name of "Newman & Son," we wish our correspondents would write "American Bee Journal" on the envelope when writing to this office. Several letters of ours have already gone to the other firm (a commission house), causing vexatious delay and trouble.

We will Present Webster's Dictionary (pocket edition), and send it by mail, post-paid, for two subscribers with $2. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

Yucca Brushes are employed for removing bees from the combs. They are a soft, vegetable fiber, and do not irritate the bees. As each separate fiber extends the whole length of the handle as well as the brush, they are almost indestructable. When they become sticky with honey, they can be washed, and when dry, are as good as ever. The low price at which they are sold, enables any bee-keeper to have six or more of them, so as to always have one handy. We can supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

OUR CLUBBING LIST.

We supply the **American Bee Journal** one year, and any of the following publications, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	*Club*
The American Bee Journal	1 00	
and Gleanings in Bee-Culture	2 00	1 75
Bee-Keepers' Magazine	1 25	1 25
Bee-Keepers' Guide	1 50	1 40
The Apiculturist	2 00	1 70
Canadian Bee Journal	2 00	1 75
Rays of Light	1 50	1 35
The 7 above-named papers	5 25	4 50
and Cook's Manual	2 25	2 00
Bees and Honey (Newman)	2 00	1 75
Binder for Am. Bee Journal	1 60	1 50
Dzierzon's Bee-Book (cloth)	3 00	2 00
Root's A B C of Bee-Culture	2 25	2 10
Farmer's Account Book	4 00	2 00
Western World Guide	1 50	1 30
Heddon's book, "Success,"	1 50	1 40
A Year Among the Bees	1 75	1 50
Convention Hand-Book	1 50	1 30

One yearly subscription for the AMERICAN BEE JOURNAL must be ordered with each paper or book, in order to take advantage of the prices named in the last column.

E. Duncan Sniffen, Advertising Agent, 3 Park Row, New York, inserts advertisements in all first-class Newspapers and Magazines with more promptness and at lower prices than can be obtained elsewhere. He gives special attention to writing and setting up advertisements in the most attractive manner, and guarantees entire satisfaction. In all his dealings, he is honorable and prompt. Send for his Catalogue of first-class advertising mediums. Mailed free. 52A40t

Simmins' Non-Swarming System is the title of a new English bee-book. The author claims that it will inaugurate a "new era in modern bee-keeping," and states that "it is based upon purely natural principles, and is the only system that can ever be relied upon, because no other condition exists in the economy of the hive that can be applied to bring about the desired result—a total absence of any desire to swarm." It contains 64 pages; is well printed and illustrated. Price 50 cents. It can now be obtained at this office.

The Production of Comb Honey, as practiced and advised by W. Z. Hutchinson, can be obtained at this office, for **25 cts.**

☞ **Sample Copies** of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office, or we will send them all to the agent.

Red Labels for one-pound pails of honey, size 3x4½ inches.—We have now gotten up a lot of these Labels, and can supply them at the following prices: 100 for $1.00; 250 for $1.50; 500 for $2.00; 1,000 for $3.00; all with name and address of apiarist printed on them—by mail, postpaid.

Should any Subscriber receive this paper any longer than it is desired, or is willing to pay for it, please send us a postal card asking to have it stopped. Be sure to write your name and address plainly. LOOK AT YOUR WRAPPER LABEL.

Marvelous!—Dr. R. B. Woodward, of Somerset, Ohio, on May 24, 1887, writes: "MESSRS. T. G. NEWMAN & SON.—The bill of goods I ordered is just received, in good condition, just 46 hours from the time the order was written! The distance from Somerset to Chicago is nearly 400 miles! Marvelous age!"

All goods ordered are shipped the very day the order is received, unless there is something to make specially, or some of the goods are not in stock. Then they go the first minute possible. *Punctuality* is the *rule* for all our business.

Do you Want a Farm Account Book? We have a few left, and make you a *very tempting offer.* It contains 166 pages, is printed on writing paper, ruled and bound, and the price is $3. We will club it and the Weekly BEE JOURNAL for a year and give you both for $2. If you want it sent by mail, add 20 cents for postage.

Some Additions to our Catalogue.—WHITE POPLAR 4-PIECE DOVETAIL SECTIONS for a fancy article of comb honey (4¼x4¼ inches—7 to the foot)—in packages of 500 for $2.50; 1,000 for $4.50.

ENAMELED CLOTH, for covering frames, price per yard, 45 inches wide, 20 cents; if a whole piece of 12 yards is taken, $2.25; 10 pieces, $20.00; if ordered by mail, send 15 cents per yard extra for postage.

Advertisements.

AUCTION SALE of BEES.

AT **Winnebago, Ills.,** 7 miles west of Rockford, on Saturday, June 4, 3 o'clock p.m., I will sell **100 Colonies** of Bees, with Section-Cases, extra Hives, etc., at Auction. A good chance to get Bees, at the opening of the honey season, at your own prices. Safe removal guaranteed.

22A1t C. M. HOLLINGSWORTH.

I.X.L. HONEY-EXTRACTOR is the cheapest and best.

For 2 "L." or American frames $6 50
For 2 frames of any size 8 00

22A2t W. C. R. KEMP, Orleans, Ind.

ITALIAN Queens by return mail: Tested, $1; Untested, 75 cts. Two-frame Nuclei, $1.50; 3-frame, $2. BEES by lb., 75 cts.

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Warranted, $1; Select, $1.25; Tested, $1.50

AMERICAN APICULTURIST 1 year and Select Queen, $1.50. **How to Rear Queens** (300 pages, 100 Illustrations, bound in cloth), by mail, and one Tested Queen, $2. **How to Get Comb Honey,** 20 pages, 10 cents. Address, **HENRY ALLEY,**

21Atf WENHAM, Essex Co., MASS.

Dadant's Foundation Factory, wholesale and retail. See advertisement in another column.

35 cts. 35 cts. 35 cts.

ORDERS filled now for Choice BROOD FOUNDATION at 35 cts., and LIGHT for comb honey, at 45 cts. All Foundation is made of the best yellow beeswax.

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1A1y Agricultural College, Mich.

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H. D. Cutting, of Clinton, Mich., says :—"Let me congratulate you on having such a good hive ; your 'reversible' section-case is perfection itself."

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THE BRITISH BEE JOURNAL

AND BEE-KEEPER'S ADVISER,

IS published every week, at **10s. 10d.** per annum. It contains the best practical information for the apiarist. It is edited by Thomas Wm. Cowan, F.G.S., F.R.M.S., etc., and published by John Huckle, King's Langley, Herts, England.

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P.S.—Send 10c. for Practical Hints to Bee-Keepers

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In use 30 years. The only successful remedy for

Nervous Debility, Vital Weakness,

and Prostration, from over-work or other causes. $1 per vial, or 5 vials and large vial powder, for $5. SOLD BY DRUGGISTS, or sent postpaid on receipt of price.—Humphreys' Medicine Co., 109 Fulton St., N. Y.
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"Boss" One-Piece Sections,

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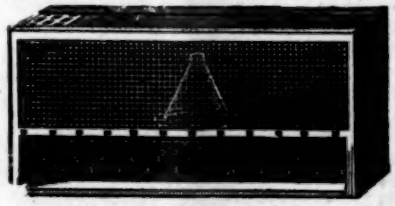

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